YSTEM:OS - DIALOG OneSearch File 349:PCT FULLTEXT 1983-2002/UB=20020411,UT=20020404 (c) 2002 WIPO/Univentio File 440: Current Contents Search(R) 1990-2002/Apr 18 (c) 2002 Inst for Sci Info File 453:Drugs of the Future 1990-2002/Mar (c) 2002 Prous Science File 390:Beilstein Online (c) Beilstein Chemiedaten und Software GmbH \*File 390: IMPORTANT - Price based on output. See HELP RATES 390. File 107:Adis R&D Insight 1986-2002/Apr W2 (c) 2002 Adis International Ltd. File 128:PHARMAPROJECTS 1980-2002/Apr W1 (c) 2002 PJB Publications, Ltd. \*File 128: New Therapeutic Class Codes are introduced. See Help News128 for further information. File 342:Derwent Patents Citation Indx 1978-01/200210 (c) 2002 Thomson Derwent \*File 342: Price changes as of 1/1/02. Please see HELP RATES 342. File 345:Inpadoc/Fam. & Legal Stat 1968-2002/UD=200214 (c) 2002 EPO File 348: EUROPEAN PATENTS 1978-2002/APR W01 (c) 2002 European Patent Office File 399:CA SEARCH(R) 1967-2002/UD=13616 (c) 2002 AMERICAN CHEMICAL SOCIETY \*File 399: Use is subject to the terms of your user/customer agreement. RANK charge added; see HELP RATES 399. Set Items Description ----Cost is in DialUnits ?ds Set Items Description VI/TI AND TYPHI/TI AND (REPA OR EXOTOXIN OR PSEUDOMON? OR s1EPA)/TI S2 17 RD (unique items) ?t s2/3/12 13 14 15 16 1 (Item 1 from file: 107) DIALOG(R) File 107:Adis R&D Insight (c) 2002 Adis International Ltd. All rts. reserv. 00126603 016009 DRUG NAME: Typhoid vaccine conjugate - National Institutes of **Health** RECORD REVISION DATE: 20010703 SYNONYMS: Vi - rEPA WHO ATC CODE: J07A-P03 - Typhoid, purified polysaccharide antigen EPHMRA ATC CODE: J7A4 - Typhoid and paratyphoid MECHANISM OF ACTION: Immunostimulants; Immunomodulators ORIGINATOR COMPANY: Nonindustrial source (USA)

PARENT COMPANY: Nonindustrial source

HIGHEST PHASE: Phase III

DEVELOPMENT STATUS: Phase III, Vietnam, Typhoid

TEXT

## Introduction:

Researchers at the US National Institutes of Health are developing a vaccine against Salmonella typhi , the causative agent of typhoid fever. The vaccine ( Vi - rEPA ) consists of the bacterium's purified capsular polysaccharide ( Vi ) conjugated with non-toxic, recombinant Pseudomonas aeruginosa exotoxin A ( rEPA ). A large-scale phase III clinical trial of the conjugate vaccine was initiated in early 1998 in Vietnamese children

aged 2-5 years; vaccine efficacy was 92% with virtually no side effects. The NIH researchers intend to conduct a clinical trial of the vaccine in children under the age of 2 years; if efficacy is high in this group, the vaccine could eventually be administered routinely in the paediatric vaccination schedule.

Currently licensed typhoid vaccines have approximately 70% efficacy, are not protective in young children and are not employed for routine vaccination. Two of the researchers involved in the development of the Vi - rEPA conjugate vaccine, Drs John Robbins and Rachel Schneerson, were major players in the development of conjugate vaccines against Haemophilus influenzae type B (Hib); routine use of these vaccines since the late 1980s has almost eliminated Hib disease from the developed world.

ADIS EVALUATION:

Typhoid 72 (IM).

PHARMACOLOGY OVERVIEW:

Mechanism of action:

Immunostimulants

Immunomodulators

CLINICAL OVERVIEW:

Route(s) of Administration: IM

Adverse events:

occasional: Fever, Injection site reactions.

2/3/13 (Item 1 from file: 128)

DIALOG(R) File 128: PHARMAPROJECTS

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0029773

DRUG NAME: Salmonella vaccine, NIH

ORIGINATOR: NIH (USA) [No Development Reported]

SYNONYMS: Vi - rEPA conjugate

TEXT: The NIH was developing a Salmonella vaccine comprising the capsular polysaccharide of Salmonella **typhi**, **Vi**, conjugated to non-toxic recombinant exoprotein A from **Pseudomonas** aeruginosa.

Clinical

In adults, children aged 5-14yr and children aged 2-4yr, the vaccine produced increases in anti-  $v_i$  IgG of 48-, 252- and 400-fold.

Licensing

A US patent was filed (DHHS ref E-020-9/0) and the technology is available for licensing. For further information, contact Robert Benson, PhD, Office of Technology Transfer, NIH, 6011 Executive Boulevard, Suite 325, Rockville, MD 20852-3804, the US; Tel: 301-496 7057, ext 267; Fax:301-402 0220; E-mail: rb20m nih.gov (Direct communication, NIH, 12 Jul 1999). Entered by GF on 1/9/1999.

STATUS: (Ceased)

World No Development Reported Argentina Available for Licensing Australia Available for Licensing Austria Available for Licensing Belgium Available for Licensing Brazil Available for Licensing Canada Available for Licensing Chile Available for Licensing China Available for Licensing Colombia Available for Licensing Denmark Available for Licensing Finland Available for Licensing

France Available for Licensing Germany Available for Licensing Available for Licensing Greece Available for Licensing Hong Kong Available for Licensing India Available for Licensing Ireland Available for Licensing Israel Available for Licensing Italy Available for Licensing Japan Available for Licensing Luxembourg Malaysia Available for Licensing Available for Licensing Mexico Available for Licensing Netherlands Available for Licensing New Zealand Norway Available for Licensing Available for Licensing Peru Available for Licensing Philippines Russian Federation Available for Licensing Portugal Available for Licensing Available for Licensing South Africa Available for Licensing Spain Available for Licensing South Korea Sweden Available for Licensing Switzerland Available for Licensing Available for Licensing Thailand Available for Licensing Turkey UK Available for Licensing USA Clinical Trial/Available for Licensing Venezuela Available for Licensing (Recombinant vaccine) J7A1 (Prophylactic vaccine) (Natural product, bacterial) (Unknown)

THER. CLASS: T2B

ORTGIN: NP-B

RTE OF ADMIN:UN

INDICATIONS: Infection, Salmonella prophylaxis N No Development Reported PHARM. CODE: IM-AG, Physiological, Hormonal, Immunostimulant, Immunogenic

agent , P-H-IM-AG

Therapy Pharmacology Status

LINKING: IM-AG T2B No Development

Reported

J7A1 IM-AG No Development

Reported

LATEST UPD: 20010130 (IL) No development reported UPDATED: 19990901 (Est) New Product (Worldwide)

19990901 (Est) Licensing Opportunity (Worldwide)

20010130 (Act) No Development Reported

REVISED: 20010202; 2001

## (Item 1 from file: 342)

DIALOG(R) File 342: Derwent Patents Citation Indx (c) 2002 Thomson Derwent. All rts. reserv.

04281763 WPI Acc No: 00-423231/36

Use of a molecular conjugate of Salmonella typhi Vi polysaccharide covalently bound through a carboxylic acid dihydrazide linker to Pseudomonas aeruginosa exoprotein A to protect against infection with Salmonella typhi

Patent Assignee: (USSH ) US DEPT HEALTH & HUMAN SERVICES Author (Inventor): KOSSACZKA Z; SZU S C; ROBBINS J B Patent (basic)

Patent No Kind Date Examiner Field of Search

WO 200033882 A1 000615 (BASIC)

Derwent Week (Basic): 0036

Priority Data: WO 98US25746 (981204); AU 9916261 (981204) Applications: WO 98US25746 (981204); AU 9916261 (981204)

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Designated States
   (National): AL; AM; AT; AU; AZ; BA; BB; BG; BR; BY; CA; CH; CN; CU; CZ;
    DE; DK; EE; ES; FI; GB; GD; GE; GH; GM; HR; HU; ID; IL; IS; JP; KE; KG
    ; KP; KR; KZ; LC; LK; LR; LS; LT; LU; LV; MD; MG; MK; MN; MW; MX; NO;
    NZ; PL; PT; RO; RU; SD; SE; SG; SI; SK; SL; TJ; TM; TR; TT; UA; UG; US
    ; UZ; VN; YU; ZW
   (Regional): AT; BE; CH; CY; DE; DK; EA; ES; FI; FR; GB; GH; GM; GR; IE;
    IT; KE; LS; LU; MC; MW; NL; OA; PT; SD; SE; SZ; UG; ZW
Derwent Class: B04; D16
Int Pat Class: A61K-047/48
Number of Patents: 002
Number of Countries: 083
Number of Cited Patents: 000
Number of Cited Literature References: 003
Number of Citing Patents: 000
2/3/15
           (Item 1 from file: 345)
DIALOG(R) File 345: Inpadoc/Fam. & Legal Stat
(c) 2002 EPO. All rts. reserv.
16008648
Basic Patent (No, Kind, Date): WO 200033882 Al 20000615
                                                          <No. of Patents:
002>
  A VI-REPA CONJUGATE VACCINE FOR IMMUNIZATION AGAINST SALMONELLA TYPHI (
     English)
Patent Assignee: US HEALTH (US); KOSSACZKA ZUZANA (SK); SZU SHOUSUN CHEN
    (US); ROBBINS JOHN B (US)
Author (Inventor): KOSSACZKA ZUZANA (SK); SZU SHOUSUN CHEN (US); ROBBINS
   JOHN B (US)
Designated States: (National) AL; AM; AT; AU; AZ; BA; BB; BG; BR; BY; CA
    ; CH; CN; CU; CZ; DE; DK; EE; ES; FI; GB; GD; GE; GH; GM; HR; HU; ID;
   IL; IS; JP; KE; KG; KP; KR; KZ; LC; LK; LR; LS; LT; LU; LV; MD; MG; MK;
   MN; MW; MX; NO; NZ; PL; PT; RO; RU; SD; SE; SG; SI; SK; SL; TJ; TM; TR;
    TT; UA; UG; US; UZ; VN; YU; ZW (Regional) GH; GM; KE; LS; MW; SD; SZ;
   UG; ZW; AM; AZ; BY; KG; KZ; MD; RU; TJ; TM; AT; BE; CH; CY; DE; DK; ES;
   FI; FR; GB; GR; IE; IT; LU; MC; NL; PT; SE; BF; BJ; CF; CG; CI; CM; GA;
   GN; GW; ML; MR; NE; SN; TD; TG
Filing Details: WO 100000 With international search report
IPC: *A61K-047/48;
CA Abstract No: *133(03)029609F; 133(03)029609F
Derwent WPI Acc No: *C 00-423231; C 00-423231
Language of Document: English
Patent Family:
   Patent No
               Kind Date
                              Applic No
                                           Kind Date
                                                       19981204
   AU 9916261
                A1 20000626 AU 9916261 A
   WO 200033882 Al 20000615 WO 98US25746
                                                 A
                                                       19981204 (BASIC)
Priority Data (No, Kind, Date):
   WO 98US25746 A 19981204
2/3/16
           (Item 1 from file: 348)
DIALOG(R) File 348: EUROPEAN PATENTS
(c) 2002 European Patent Office. All rts. reserv.
01177305
A VI - REPA CONJUGATE VACCINE FOR IMMUNIZATION AGAINST SALMONELLA TYPHI
VI - REPA KONJUGIERTE IMPFSTOFF ZUR IMMUNISIERUNG GEGEN SALMONELLA TYPHI
CONJUGUE VACCINAL
                    VI
                       REPA
                                  POUR L'IMMUNISATION CONTRE LA SALMONELLA
    TYPHI
PATENT ASSIGNEE:
 THE GOVERNMENT OF THE UNITED STATES OF AMERICA, as represented by THE
   SECRETARY OF THE DEPARTMENT OF HEALTH AND HUMAN SERVICES, (304191),
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National Institute of Health, Office of Technology Transfer, 6011 Executive Boulevard, Suite 325, Rockville, MD 20852-3804, (US),

(Applicant designated States: all)

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INVENTOR:
  KOSSACZKA, Zuzana, Narcisova 52, 821 01 Bratislava, (SK)
  SZU, Shousun, Chen, 9402 Wildoak Drive, Bethesda, MD 20814, (US)
  ROBBINS, John, B., 3901 Rosemary Street, Chevy Chase, MD 20815, (US)
PATENT (CC, No, Kind, Date):
                              WO 0033882 000615
                              WO 98960734 981204; WO 98US25746 981204
APPLICATION (CC, No, Date):
DESIGNATED STATES: AT; BE; CH; CY; DE; DK; ES; FI; FR; GB; GR; IE; IT; LI;
  LU; MC; NL; PT; SE
INTERNATIONAL PATENT CLASS: A61K-047/48
LANGUAGE (Publication, Procedural, Application): English; English; English
2/3/1
           (Item 1 from file: 349)
DIALOG(R) File 349: PCT FULLTEXT
(c) 2002 WIPO/Univentio. All rts. reserv.
00570509
A VI - REPA CONJUGATE VACCINE FOR IMMUNIZATION AGAINST SALMONELLA TYPHI
CONJUGUE VACCINAL
                   VI - REPA POUR L'IMMUNISATION CONTRE LA SALMONELLA
    TYPHI
Patent Applicant/Assignee:
  THE GOVERNMENT OF THE UNITED STATES OF AMERICA as represented by THE
    SECRETARY DEPARTMENT OF HEALTH AND HUMAN SERVICES,
  KOSSACZKA Zuzana,
  SZU Shousun Chen,
  ROBBINS John B,
Inventor(s):
  KOSSACZKA Zuzana,
  SZU Shousun Chen,
  ROBBINS John B,
Patent and Priority Information (Country, Number, Date):
                       WO 200033882 A1 20000615 (WO 0033882)
 Patent:
                       WO 98US25746 19981204
 Application:
                                              (PCT/WO US9825746)
  Priority Application: WO 98US25746 19981204
Designated States: AL AM AT AU AZ BA BB BG BR BY CA CH CN CU CZ DE DK EE ES
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 MD MG MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT UA UG
 US UZ VN YU ZW GH GM KE LS MW SD SZ UG ZW AM AZ BY KG KZ MD RU TJ TM AT
  BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE BF BJ CF CG CI CM GA
  GN GW ML MR NE SN TD TG
Publication Language: English
Fulltext Word Count: 11108
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            $1.60 1 Types
     $1.75 Estimated cost File349
            $0.27
                    0.015 DialUnits File440
     $0.27
           Estimated cost File440
           $0.11
                    0.015 DialUnits File453
     $0.11 Estimated cost File453
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                    0.015 DialUnits File390
     $0.00 Estimated cost File390
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    $13.58
           Estimated cost File128
                   0.031 DialUnits File342
               $4.90 	ext{ 1 Type(s)} in Format 3
           $4.90 1 Types
     $5.34 Estimated cost File342
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\$0.15 0.031 DialUnits File345 \$10.55 1 Type(s) in Format 3 \$10.55 1 Types \$10.70 Estimated cost File345 0.031 DialUnits File348 \$0.14 \$1.70 1 Type(s) in Format 3\$1.70 1 Types \$1.84 Estimated cost File348 0.015 DialUnits File399 \$0.19 \$0.19 Estimated cost File399 OneSearch, 10 files, 0.231 DialUnits FileOS \$0.21 TELNET \$50.36 Estimated cost this search \$50.36 Estimated total session cost 0.231 DialUnits

### Status: Signed Off. (1 minutes)